*chapter 23 – Developing Concepts of Exponents, Integers, and Real Numbers*

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| **5th Grade-**  **GLE** 0506.3.1 Understand and use order of operations.  **SPI** 0506.2.2 Write the prime factorization of numbers through 50 using both exponential and standard notation.  **SPI** 0506.3.1 Evaluate algebraic expressions involving decimals and fractions using order of operations.  **SPI** 0506.3.2 Evaluate multi-step numerical expressions involving fractions using order of operations.  **6th Grade-**  **GLE** 0606.3.3 Extend order of operations to include grouping symbols and exponents.  **SPI** 0606.3.2 Use order of operations and parentheses to simplify expressions and solve problems.  **SPI** 0606.3.6 Solve two-step linear equations using number sense, properties, and inverse operations. | |
|  | *Need paper, unfolded box (equal sides), circles, tape, & glue stick*   * Cover one side of box in circles (in rows) * Count number in each row and number of rows * Write as an equation * Convert equation into an equivalent exponent * Fold and tape box * Write equation for full box of circles * Convert equation for full box of circles into an equivalent exponent   **Time:** 15 minutes |

**Virtual Manipulatives Time**: 10 minutes total (5 minutes each)

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| *Math Jeopardy Games*  <http://www.math-play.com/math-jeopardy.html>  **Exponent Jeopardy Games**  Objective: Students compete as teams to try and correctly answer questions about exponents. |
| 6th Grade Math Games <http://www.math-play.com/6th-grade-math-games.html>  **The Order of Operations**  Objective: Students must correctly answer equations to earn points as they progress to the next level. |

**Activities from Textbook** – 5 minutes per activity/ 20 minutes total

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| *Guess My Number* | Activity 23.1 Order of Operation pg. 474  Materials: Worksheet (Hints & workspace), Pencil |
| *How Far Away From the Sun* | Activity 23.3 Scientific Notation pg. 478  Materials: Worksheet (Planet distance from sun), Pencil |
| *Football Statistics* | Activity 23.5 Exploring Integers pg. 480  Materials: Sheet of yards for running backs, pencils |
| *How Close is Close* | Activity 23.9 Real Numbers pg. 489  Materials: Paper, pencil |

**Lesson Plan**

*Candies R Us*

<http://www.uen.org/Lessonplan/preview.cgi?LPid=21546>

*Description:* Each student determines what dimensions will create a box that will hold a predetermined amount of candy. They then evaluate the boxes to determine which is the best.

Candy – always a hit with kids!